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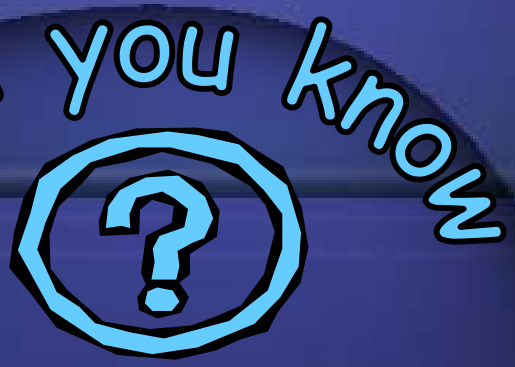


# Reducing the threat of nuclear weapon proliferation

Argonne's Reduced Enrichment for Research and Test Reactors (RERTR) program develops technology to minimize and, to the extent possible, eventually eliminate the use of highly enriched uranium (HEU) in civilian nuclear applications worldwide. There are more than 150 research reactors around the world that still use HEU fuel.

Initiated in 1978, the RERTR program has long relied on Argonne's skills as a world leader in designing reactors and developing nuclear fuel to convert research and test reactors across the globe to low enriched uranium (LEU) fuel – a material that cannot be diverted for direct use in nuclear weapons.

43 HEU reactors in 23 countries from Argentina to Turkey have been modified to run reduced enrichment fuel, and 66 additional reactors are prime candidates for conversion.

RERTR is a key element of the nation's efforts to reduce the spread of nuclear weapons.

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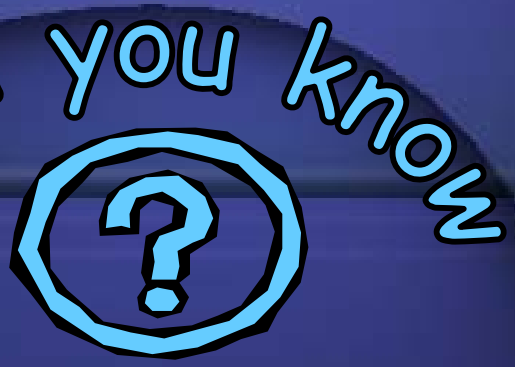


# Hydrogen economy

Hydrogen is a clean, efficient energy source that can reduce our dependence on foreign oil and significantly reduce pollution and global climate impacts. Future advanced nuclear reactors can provide the energy for a large-scale, emission-free, domestic hydrogen production capability. Argonne is playing a key role in developing the advanced reactor and hydrogen generation technologies needed to support the vision of a hydrogen economy.

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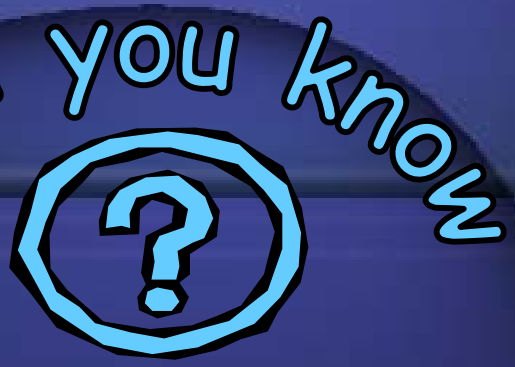


# Nuclear energy roots at Argonne

Nobel laureate Enrico Fermi, Argonne's founding director, led the team at the University of Chicago that produced the world's first controlled nuclear chain reaction in 1942. Argonne was officially chartered in 1946 as the nation's first national lab and given the mission to develop peaceful uses of the atom. Argonne-led research is the basis for reactors in operation worldwide.  Today, Argonne continues to have a key role advancing technologies needed to meet future demand for a reliable, environmentally safe and sustainable energy supply.

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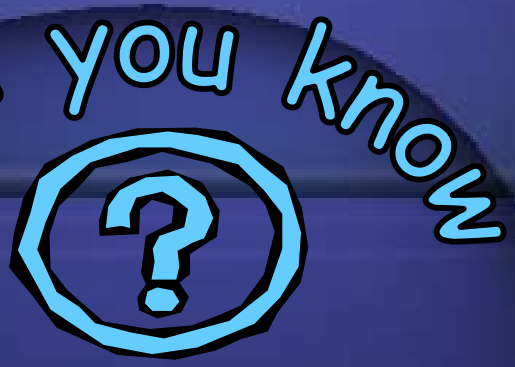


Nuclear energy is the only large-scale electrical generating technology that does not emit greenhouse gases. Through the use of nuclear energy, the U.S. has avoided over three billion tons of air emissions since 1970.

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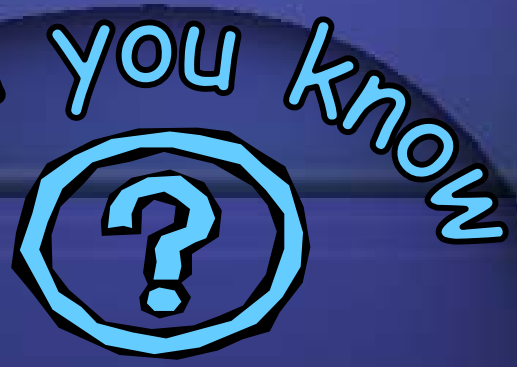


The U.S. has 103 operating nuclear plants that efficiently provide one-fifth of the nation's electricity. These plants do not emit greenhouse gases, operate year-round in all weather conditions, and produce the least expensive power on the grid today (other than hydroelectric).

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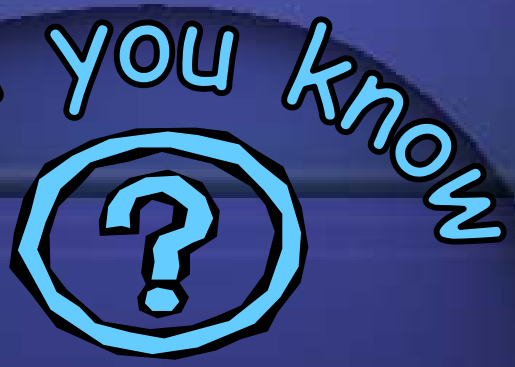


Over the last 15 years, utilities in the U.S. have become the best operators of nuclear plants in the world. U.S. nuclear power plants are working at an efficiency of about 92%, up from 65% in 1990 and 56% in 1980. This places the USA among the performance leaders with 12 of the world's top 25 reactors achieving more than 98%. Although no new nuclear plants have been built in the U.S. since 1979, this improvement in plant efficiency is equivalent to adding 38 reactors since 1980.

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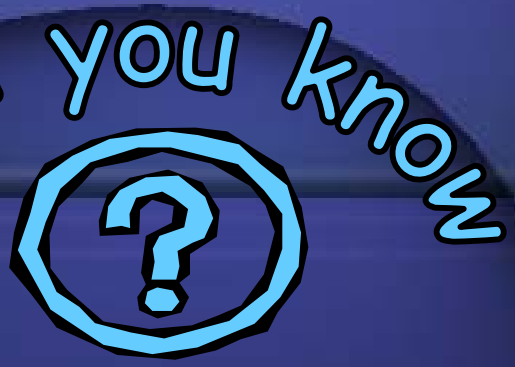


# Future of energy

"Fast" reactors in conjunction with fuel recycling technologies can reduce the cost and duration of storing and managing nuclear waste significantly, and are able to extract 100 times more energy from the same amount of uranium. These technologies, substantially developed by Argonne, also enhance safety and nonproliferation, and ensure a reliable, sustainable energy supply for the future.